

There is evidently a multitude of other forms of neuration, which must be associated with the preceding. They ought to form the subject of a special work. It is only by this means that the apparent exceptions can be explained; such as the secondary nervures of *Oxyacantha*, *Galeopsis*, and *Euphrasia*, which do not terminate at the apex, but in the notches; the tertiary nervures of the *Ranunculi*; or the circumscription of the notches by the tertiary nervures in many species of *Acer*, with other analogous phænomena.

The above-mentioned forms, which are undoubtedly the most common, may be grouped as follows:—

Leaves are either *simple*, *digitate* or *pinnate*.

Simple leaves, which are composed only of one plate, have their neuration,—

A. Running towards the margin (*Randläufer*); when the nervures run from the central rib to the margin and terminate there; these are—

a. Simple, when no tertiary nervures arise from the secondary nervures.

b. Compound, when there are tertiary nervures.

B. Arched (*Bogenläufer*). Each pair of secondary nervures uniting to form an arch.

C. Running towards the apex (*Spitzläufer*). Two inferior secondary nervures running between the margin and the central rib to attain the apex of the leaf;—

a. *Complete*, when the two nervures actually reach the apex.

b. *Incomplete*, when the two nervures do not reach the apex.

D. Marginal (*Saumläufer*). The two lateral nervures of the base running towards the apex, following the margins throughout.—*Bibl. Univ. de Genève*, Oct. 1852, p. 161.

*On the Occurrence of large quantities of the Shells of Anodonta cygnea on the sea-coast near Sandgate.* By FRANCIS BRENT, Esq.

Sandgate, March 21, 1853.

MY DEAR GRAY,—I noticed a curious circumstance this evening:—in walking by the sea-shore I perceived large quantities of the shells of *Anodonta cygnea* strewn along the beach,—either washed up at the top of high-water mark, or mixed with the drift weeds and rubbish. Nearly every specimen was more or less imperfect; in most instances one valve only, and part of the other remained; in many cases, however, there was a singular perforation of about a quarter of an inch in diameter in one of the valves, and in some instances both valves were perfect, but in those cases part of the muscles that open and close the shells remained. The quantity was so great, that in the distance of a mile I could certainly have collected a waggon-load. Now as this mollusk inhabits only fresh water, how comes it that so large a quantity should be found on the sea-coast? I can only account for the circumstance by the supposition that they had been brought there by birds, probably Royston crows, which, during the

winter, have frequented this coast in great numbers; the herons also may have had a hand, or rather beak in it.

The military canal which runs between Sandgate and Hythe, at the distance of about a quarter of a mile from the sea, abounds with these large mussels, and during the winter, the water having been drawn off for some days, the bed was completely exposed, so that the unfortunate wretches, who possessed not the power of locomotion, fell an easy prey to the thievish crows and long-billed herons.

I have frequently noticed these crows hunting for snails along the sides of the cliff.

It would be a puzzle for future geologists, should by any chance the present beach be suddenly covered up, as they would find in a bed of sea-worn pebbles a stratum of freshwater shells, and not an inconsiderable one either. Some of these shells are nearly 7 inches wide or long.

Ever sincerely yours,

S. O. Gray, Esq.

FRANCIS BRENT.

Sandgate, March 28, 1853.

In respect to "*Anodonta cygnea*," I am glad that Dr. Gray thinks the fact of the shells being found upon the beach worthy of record: he can make what use he likes of the information. I went this evening to have another examination of the spot, but can send you nothing more worthy to be mentioned.

I found that the shells were in the greatest quantity immediately over the bank of beach on the side nearest the canal, where the sea never comes except during storms, so that the shells were not placed there by the waves. I walked for nearly two miles without seeing any diminution of the number, and I have no doubt I could have found them nearly close to Hythe; in some places they were so thick, that I could scarcely put my foot down without treading on a shell or fragment. I think I told you that the shells were scattered on the land from the high-water mark nearly to the canal.

It has been suggested to me by a friend here, that these shells might have been washed out into the sea when the water was let out of the canal at the sluice gates. I can scarcely think this probable, as in that case they would not have been found inland from high-water mark—they would not have had the peculiar hole in them—they would have been found in a more perfect condition; and again, as the habit of the mollusk is to bury itself in the mud, the force of the stream must have been very great indeed to have dislodged it; whereas I noticed this evening, that although the gates were open the stream was flowing very slowly. I still, therefore, hold to my opinion, that they have been carried to the spot on which they are found by herons or Royston crows.

I have sent a small box containing some specimens addressed to Dr. Gray at the Museum.

Believe me, ever yours sincerely,

S. O. Gray, Esq.

FRANCIS BRENT.